

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. **(Currently Amended)** An induction system intercooler for cooling intake gas for supplying intake gas to at least one cylinder of an internal combustion engine, having an intake manifold, wherein the intake manifold supplies intake gas to at least one engine cylinder, the induction system comprising:

an intake manifold; and

an intercooler disposed at least partially in the intake manifold for cooling the intake gas, the intercooler comprising:

a body having a longitudinal axis, and a passageway formed in the body;

and

an inlet opening located on one end of the body, wherein the intake gas enters the passageway through the inlet opening; and

a plurality of cooling tubes forming at least a portion of the body, wherein the plurality of tubes at least partlypartially surrounds the passageway, wherein each of the plurality of cooling tubes is spaced from an adjacent cooling tube such that an air flow path is formed there betweenthere between.

2. **(Currently Amended)** The induction system intercooler according to claim 1, wherein the passageway is a central passageway that extends substantially parallel to the longitudinal axis.

3. **(Currently Amended)** The induction system intercooler according to claim 1, wherein the plurality of tubes substantially surrounds the passageway.

4. **(Currently Amended)** The induction system intercooler according to claim 1, wherein the intake gas flows along the passageway within the body and radially outward therefrom through the air flow path between the cooling tubes.

5. **(Currently Amended)** The induction system intercooler according to claim 1, wherein the plurality of cooling tubes extends substantially parallel to the longitudinal axis.

6. **(Currently Amended)** The induction system intercooler according to claim 1, wherein the plurality of cooling tubes comprises:

a first group of cooling tubes operatively connected to a coolant inlet; and

a second group of cooling tubes operatively connected to a coolant outlet, wherein the first group of cooling tubes is operatively connected to the second group of cooling tubes such that a coolant flows from the coolant inlet into the first group of cooling tubes, the coolant then flows through the first group of cooling tubes to the second group of cooling tubes, the coolant then exits the second group of cooling tubes through the coolant outlet.

7. **(Currently Amended)** The induction system intercooler according to claim 6, further comprising:

an outlet ring connected to one end of the body, wherein the outlet ring operatively connects the first group of cooling tubes to the second group of cooling tubes such that the coolant flows from the first group of cooling tubes to the second group of cooling tubes.

8. **(Currently Amended)** The induction system intercooler according to claim 7, wherein the outlet ring is located on an end of the body opposite the inlet opening.

9. **(Currently Amended)** The induction system intercooler according to claim 6, further comprising:

an inlet ring connected to one end of the body, wherein the inlet ring includes the coolant inlet and the coolant outlet.

10. **(Currently Amended)** The induction system intercooler according to claim [[1]]2, further comprising:

at least one plate extending substantially orthogonal to the longitudinal axis, wherein each of the at least one plate includes a central opening therein, wherein the central opening corresponds to the central passageway in the body such that the intake gas is capable of flowing through the central opening.

11. **(Currently Amended)** The induction system intercooler according to claim 10, wherein each plate ~~comprising~~ comprises a plurality of openings formed ~~thereon~~therein about a periphery of the plate, wherein one of the plurality of cooling tubes is received within a corresponding one of the plurality of openings.

12. **(Currently Amended)** The induction system intercooler according to claim 10, wherein the at least one plate includes a plurality of plates spaced along the longitudinal axis of the body.

13. **(Currently Amended)** The induction system intercooler according to claim 1, further comprising:

a wire gauze extending the length of the body, ~~wherein~~ the wire gauze being positioned between the ~~central~~ passageway and the plurality of cooling tubes.

14. **(Currently Amended)** The induction system intercooler according to claim 1, further comprising:

at least one plate extending substantially orthogonal to the longitudinal axis, wherein each of the at least one plate includes a plurality of openings formed therein for receiving one of the plurality of cooling tubes.

15. **(Currently Amended)** The induction system intercooler according to claim 14, wherein the at least one plate includes a plurality of plates spaced along the longitudinal axis of the body.

16. **(Currently Amended)** The induction system intercooler according to claim 1, further comprising[[:] a flow director surface for directing the intake gas into the passageway.

17. **(Currently Amended)** ~~In an~~~~An~~ internal combustion engine ~~having an~~ intake manifold supplying intake gas to the intake port of at least one engine cylinder, an intercooler for cooling the intake gas before the intake gas is supplied to the at least one engine cylinder, comprising:

at least one engine cylinder having an intake port;  
an intake manifold for supplying intake gas to the intake port; and  
an intercooler for cooling the intake gas before the intake gas is supplied to the intake port, the intercooler comprising:  
an body having a longitudinal axis; and  
a plurality of cooling tubes being supplied with a coolant, wherein each of the plurality of cooling tubes is spaced from ~~an adjacent cooling tube~~~~other cooling tubes~~ disposed adjacent thereto such that ~~[[an]]~~ a plurality of air flow paths is formed there between the plurality of cooling tubes, such that ~~wherein~~ the intake gas flows through at least one of the plurality of air flow paths before flowing into the intake port of the at least one engine cylinder,  
~~wherein~~ the intercooler being positioned at least partly~~partially~~ within the intake manifold.

18. **(Currently Amended)** The internal combustion engine intercooler according to claim 17, wherein the intercooler further comprising comprises a passageway that extends substantially parallel to the longitudinal axis.

19. **(Currently Amended)** The internal combustion engine intercooler according to claim 18, wherein the plurality of cooling tubes substantially surrounds the passageway.

20. (Currently Amended) The internal combustion engine intercooler according to claim 18, wherein ~~the internal combustion engine comprises the at least one cylinder is at least two engine cylinders,~~

wherein the intake manifold includes at least two intake pipes[[],] which correspond to the at least two engine cylinders,

wherein the intercooler is arranged within the intake manifold such that the intake gas flows into the passageway, ~~wherein the intake gas flows then radially outward away from the passageway through the plurality of~~ air flow paths past the plurality of cooling tubes into the ~~respective~~ at least two intake pipes.

21. (Currently Amended) The internal combustion engine intercooler according to claim 20, wherein the plurality of cooling tubes comprises:

a first group of cooling tubes operatively connected to a coolant inlet; and

a second group of cooling tubes operatively connected to a coolant outlet, wherein the first group of cooling tubes is operatively connected to the second group of cooling tubes such that a coolant flows from the coolant inlet into the first group of cooling tubes, the coolant then flows through the first group of cooling tubes to the second group of cooling tubes, the coolant then exits the second group of cooling tubes through the coolant outlet.

22. (Currently Amended) The internal combustion engine intercooler according to claim 21, wherein the intercooler further comprises comprising:

an outlet ring connected to one end of the body, wherein the outlet ring operatively connects the first group of cooling tubes to the second group of cooling tubes such that the coolant flows from the first group of cooling tubes to the second group of cooling tubes.

23. (Currently Amended) The internal combustion engine intercooler according to claim 21, wherein the intercooler further comprises comprising:

an inlet ring connected to one end of the body, wherein the inlet ring includes the coolant inlet and the coolant outlet.

24. **(Currently Amended)** The internal combustion engine intercooler according to claim 19, wherein the intercooler further comprises comprising: at least one plate positioned within the body.

25. **(Currently Amended)** The internal combustion engine intercooler according to claim 24, wherein each of the at least one plate includes a plurality of openings formed therein for receiving one of the plurality of cooling tubes.

26. **(Currently Amended)** The internal combustion engine intercooler according to claim 24, wherein the at least one plate includes a plurality of plates spaced along the longitudinal axis of the body.

27. **(Currently Amended)** The internal combustion engine intercooler according to claim 25, further comprising: wherein each of the at least one plate includes a central opening therein,

wherein the central opening corresponds to a passageway in the body such that the intake gas is capable of flowing through the central opening through the passageway.

28. **(Currently Amended)** The internal combustion engine intercooler according to claim 27, wherein the intercooler further comprises comprising: a flow director surface for directing the intake gas into the passageway.

29. **(Currently Amended)** [[An]]A combination of an intake manifold in combination with and an intercooler, wherein the combination comprising:

an intake manifold having at least one intake pipe configured for supplying intake gas to at least one engine cylinder; and

a passageway positioned within the intake manifold for supplying intake gas to each of the at least one intake pipe; and

an intercooler at least partially positioned within the passageway, wherein the intercooler has an comprising:

a body having a plurality of cooling tubes located therein, wherein each of the plurality of cooling tubes is spaced from ~~an adjacent cooling tube~~ ~~other cooling tubes~~ disposed adjacent thereto such that [[an]]a plurality of air flow paths is formed there between the plurality of cooling tubes, such that wherein the intake gas flows through at least one of the plurality of air flow paths before flowing into the at least one intake pipe.

30. (Currently Amended) The combination according to claim 29, wherein the intercooler further comprising comprises:

at least one plate positioned within the body,

wherein each of the at least one plate includes a plurality of openings formed therein for receiving one of the plurality of cooling tubes.

31. (New) The induction system according to claim 1, further comprising a charging device disposed in the induction system upstream of the intercooler.